



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,077	03/11/2004	Thomas F. Wilton	115248	4374
25944	7590	12/29/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			MILLER, PATRICK L	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,077

Applicant(s)

WILTON ET AL.

Examiner

Patrick Miller

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06232004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 6-9, 13, 19-21, and 27 are objected to because of the following informalities: see bullet(s) below. Appropriate correction is required.
 - With respect to claim 6, it is unclear which device is linked directly to the electric drive motor. Please clarify.
 - Claims 6-9 recite “a component architecture” (ll. 1-2). Change “a” to “the.”
 - With respect to claim 10, please clarify whether all of these limits have upper and lower limits or if only the torque measurement contains an upper and lower limit.
 - With respect to claims 9 and 21, it is unclear what is linked to the electric drive motor. Please clarify.
 - Claim 13 recites “component status” (l. 2). Lack of antecedent basis for this term. Claim 1 initially recites “states.” Please clarify.
 - Claims 19-21 recite “a component architecture” (ll. 1-2). Change “a” to “the.”
 - Claim 21 does not end with a period.
 - Claim 27 recites “a switch mechanism” (l. 2). It is unclear whether this mechanism is the same as the “switching mechanism” referred to in claim 26. Please clarify.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 10-12, 14-18, and 22- 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Drozdz et al (6,242,873).
 - With respect to claims 1 and 14, Drozdz et al (6,242,873) disclose a method for controlling a hybrid vehicle, where the electric vehicle has an energy generation system (Fig. 1, #2; col. 7, ll. 2-10), an energy storage system (Fig. 1, #4), at least one electric motor (Fig. 1, #6); the vehicle has the ability to operate in one of multiple predetermined component propulsion configurations (col. 8, ll. 16-37; col. 10, ll. 13-25; different configurations are output based on an updated model, which make the vehicle run by the motor, the engine, or both, i.e., by different architectures); and a controller (Fig. 1, #7) that determines a currently selected component configuration (col. 9, ll. 14-24); generates command signals to vehicle components to establish a defined component architecture, and to establish component states corresponding to the determined component configuration (col. 10, ll. 29-50; controller calculates the battery state of charge and generates an energy consumption profile or command); and generates command signals to vehicle components for operation within determined parameters corresponding to the

Art Unit: 2837

component configuration (cols. 10/11, ll. 51-67/1-11; battery state of charge is outside allowable range, command to reject and get a new set of state variables).

- With respect to claims 2, 3, 15, and 16, the controller determines the component configuration based upon an operator user input signal (col. 8, ll. 16-37; accelerator pedal is the externally applied user input signal).
- With respect to claims 4 and 17, Drozdz et al disclose the controller determines the component configuration based upon vehicle states or conditions (col. 9, ll. 49-54; state of charge is a vehicle state).
- With respect to claims 5 and 18, Drozdz et al disclose the controller determines the component configuration based upon vehicle sensor states or measurements (col. 9, ll. 55-58; wheel-speed, torque are measurements).
- With respect to claim 6, Drozdz et al disclose the set architecture is in Figure 1, thus the controller must deal with at least one energy generation device, where a dc generator is used in place of the ac generator thus (col. 7, ll. 3-4), eliminating the need for #3 and making this device linked to #4 and the electric motor, #6, all in Figure 1.
- With respect to claims 10, 22, and 23, Drozdz et al disclose the controller specifies an upper and lower torque limit, a power limit, or a speed limit for operation of the electric drive motor (cols. 9/10, ll. 55-58/64-67; where torque is a state variable and the controller determines when a state variable value is outside a range; therefore, torque has an upper and lower limit).
- With respect to claims 11 and 24, Drozdz et al disclose an upper and lower energy generation limit, where the energy generation limit is based on the state-of-charge (SOC)

of the energy storage device (col. 8, ll. 16-37). More specifically, when the SOC is below a certain level, the vehicle is put in “engine” mode, which begins to charge the storage device. This is interpreted to be the upper *energy* generation limit because this is the point when energy is generated for the storage device. Conversely, when the SOC is above a certain level, the vehicle is in “motor” mode, which stops charging the storage device. This is interpreted as the lower *energy* generation limit because this is the point when energy stops being generated for the storage device.

- With respect to claims 12 and 25, Drozd et al disclose the controller specifies an upper and lower energy storage limit (col. 10, ll. 64-66; battery SOC outside range means upper and lower limits).

3. Claims 1-5, 7-9, 13-21, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Preikschat (4,363,999).

- With respect to claims 1 and 14, Preikschat discloses a method for controlling a hybrid vehicle, where the electric vehicle has an energy generation system (col. 4, ll. 66-68; motor generates energy), an energy storage system (Fig. 1, #28), at least one electric motor (Fig. 1, #s 24); the vehicle has the ability to operate in one of multiple predetermined component propulsion configurations (col. 5, ll. 26-65); and a controller (Fig. 1, #32) that determines a currently selected component configuration (cols. 5/6, ll. 66-68/1-25); generates command signals to vehicle components to establish a defined component architecture, to vehicle components to establish component states corresponding to the determined component configuration, and for operation within determined parameters corresponding to the component configuration (col. 6, ll. 26-57).

Art Unit: 2837

- With respect to claims 2, 3, 15, and 16, the controller determines the component configuration based upon an operator user input signal (cols. 5/6, ll. 67-68/1-25; pedals are the externally applied user input signal).
- With respect to claims 4 and 17, Preikschat discloses the controller determines the component configuration based upon vehicle states or conditions (col. 6, ll. 16-25; rate of energy transfer and vehicle velocity are vehicle conditions).
- With respect to claims 5 and 18, Preikschat discloses the controller determines the component configuration based upon vehicle sensor states or measurements (col. 6, ll. 8-25; speed, brake, power sensors).
- With respect to claims 7 and 19, Preikschat discloses the energy generation device linked to the motor, and the generation device isolates the energy storage device from the drive motor (Fig. 2, COM1 connected to AM1 and isolates AM1 from B1).
- With respect to claims 8 and 20, Preikschat disclose at least one energy generation device connected to an energy storage device and an electric motor (Fig. 2, COM1 to AM1 and B1), and where at least one other electric motor is isolated from the energy generation drive (COM1 isolated from AM4 based on relay configurations).
- With respect to claims 9 and 21, Preikschat discloses at least two energy storage devices (Fig. 2, B1-4), where at least one energy generation device is linked to one of the energy storage devices, and the energy generation device is linked to the motor (Fig. 2, Com 1 to B1 and AM1).
- With respect to claims 13, 26, and 27, the step of generating command signals to establish component states includes switching various propulsion components out of

Art Unit: 2837

electrical communication with other components, and the at least one energy storage device, and the at least one electric motor are coupled together through a switching mechanism that can selectively electrically isolate one or more propulsion components from the other propulsion components, and each propulsion component is separately coupled to other propulsion components through the switch mechanism (col. 5, ll. 31-52; Fig. 2, relays K to each motor and battery B1-4).

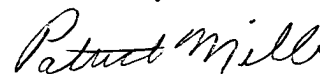
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 571-272-2070. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 41. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

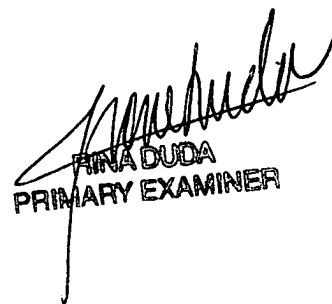
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick Miller
Examiner
Art Unit 2837

pm
December 26, 2004



TINA DUDA
PRIMARY EXAMINER